

**WHAT IS CLAIMED IS**

1           1.     A method for determining MAC address for a remote device having a  
2     known, unique DEK in a network where devices may not send a confirmation to a  
3     *SetNEK* request, the method comprising the steps of:

4                 preparing a broadcast message with a *SetNEK* request containing a  
5     unique, temporary *NEK*;

6                 encrypting the message with the DEK of the remote device;

7                 transmitting the broadcast message on a network medium;

8                 confirming receipt of the temporary *NEK* by sending a request that  
9     requires a response from the remote device which is encrypted with the temporary  
10    *NEK*; and

11                determining the MAC address of the remote device from the response.

1           2.     The method of Claim 1 wherein the remote device is not a member of a  
2     network.

1           3.     The method of Claim 2 further comprising the step of using the MAC  
2     address of the remote device in a unicast transmission to reliably confirm receipt of the  
3     temporary *NEK*.

1           4.     The method of Claim 3 further comprising the step of using the MAC  
2     address of the remote device in a unicast transmission containing a *SetNEK* message  
3     with the local *NEK*.

1           5.     The method of Claim 4 further comprising the step of using the MAC  
2     address of the remote device in an additional unicast transmission which is encrypted  
3     with the local *NEK*, for purposes of confirming receipt of the local *NEK*.

1           6.     The method of Claim 2 further comprising the steps of:  
2                 using the determined MAC address to reliably send the local *NEK*;  
3                 preparing a unicast message to the remote device containing a *SetNEK*  
4     request where the *SetNEK* request contains a unique, temporary *NEK*;  
5                 encrypting the unicast message with the DEK of the remote device;  
6                 transmitting the unicast message on the medium; and  
7                 confirming receipt of the temporary *NEK* by sending a request that  
8     requires a response which is encrypted with the temporary *NEK*.

1           7.     The method recited in Claim 1, wherein the network is a powerline  
2     network.

1           8.     The method recited in Claim 1, wherein the remote devices are  
2     implemented according to the HomePlug Powerline Alliance standard.

1           9.     The method of Claim 1 wherein the request is a request statistics MME  
2     and the response is a statistic response MME.

1           10. The method of Claim 1 wherein the request is a request channel  
2           estimation MME and the response is a channel estimation response.